Name _____



4. 3, 12, 48,

5. 2187, 729, 243,

6. Your company purchased a new machine this year for \$146,000. The machine loses 21% of its value every year.

a) Write a model for this situation:

b) How much is the machine worth in 4 years?

- c) How long does it take before the machine is worth \$12,000? Round to 2 decimal places.
- 7. You put \$6400 in a bank at 4.1% interest for 12 years. How much do you have at the end if the bank compounds the interest: (show your work!!)

a) Quarterly:

b) Monthly:

c) Continuously:

8. Write an exponential decay function that has been vertically stretched by 5, moved to the right 7 and down 12.

Give the characteristics for the given exponential:

9. $f(x) = -2^x + 3$								
Asymptote: Range:				- 2	2			
3 points on graph:								_ _ + •
y-intercept: Rate of change [0,2]	-	4	-2	-2	2	2	4	
Increasing: Decreasing:				-4	╞			
End Behavior: $x \rightarrow __$, $f(x) \rightarrow __$ & $x \rightarrow __$, $f(x) \rightarrow _$			-		•			

10. Describe all of the following for the given exponential functions:

	$f(x) = 4^{x+2}$	$f(\mathbf{x}) = \left(\frac{1}{5}\right)^{\mathbf{x}} + 3$
Growth or Decay?		
Transformation?		
Range?		
Asymptote?		
Increasing or Decreasing?		
y-intercept?		
Does this function have an x-intercept?		
$x \to -\infty, f(x) \to$		
$x \to \infty, f(x) \to$		

Additional Topics:

- Even vs. Odd Graphically and Algebraically
- Intersections of functions especially quadratics
- Writing linear, exponential, and quadratic equations given graphs or tables